DOCUMENT RESUME

ED 382 581 SP 035 920

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TITLE Central District Research Section of the American Alliance for Health, Physical Education, Recreation, and Dance Proceedings (Fargo, ND, April 26-30, 1995).
INSTITUTION American Alliance for Health, Physical Education, Recreation, and Dance. Central District.
PUB DATE 29 Apr 95
NOTE 13p.
PUB TYPE Collected Works - Conference Proceedings (021)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adapted Physical Education; Athletes; Athletics; Body Composition; Course Content; Disabilities; Elementary Secondary Education; Higher Education; *Physical Education Teachers; *Physical Fitness; Preservice Teacher Education; Research Projects; *Student Teacher Attitudes; Student Teachers; Teacher Characteristics; Therapeutic Recreation

ABSTRACT

This report provides descriptions of 14 research projects offered as poster presentations at the 1995 conference. The research projects focused on: attitudes of preservice physical education teachers toward teaching students with mild disabilities; relationship between preservice physical education teachers' attributes and attitudes toward students with mild disabilities; course content characteristics of the introductory adapted physical education course for preservice physical education teaching majors; educational preparation of instructors of introductory adapted physical education courses; therapeutic recreation participation levels of adolescents during psychiatric hospitalization; Richardson apparatus for leaping ability; a profile of season ticket holders for women's basketball; comparison of reaction time measurement in male athletes and nonathletes; isometric strength measurements as predictors of physical performance test scores in college men; comparison of two methods of measuring sit-and-reach flexibility in high school students; recommendations for school system selection of devices which measure adipose tissue; a longitudinal study of physiological changes in free living college football players; comparing fitness between two geographically different female populations; and total serum cholesterol fluctuations in active and nonactive 18 to 30 year old women during their menses. (JDD)

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SP 035 920

PP-1. ***Attitudes of pre-service physical education teachers in Central District AAAHPERD colleges and universities toward teaching students with mild disabilities.**** Folsom-Meek, S. L. [MSU], and Nearing, R. J. [SCTU]. The purpose of this study was to compare pre-service physical education teachers' attitudes toward students who are behaviorally disordered (BD), mildly mentally retarded (MiMR), and learning disabled (LD). Students with these labels are likely to receive physical education in an inclusion setting. Pre-service physical teachers (n = 402) from institutions in the nine Central District AAAHPERD states and enrolled in an introductory adapted physical education (IAPE) course, completed the PEATID-III Pre-service Revision [PS] (Rizzo, 1993) during the last two weeks of the course. All institutions meeting criteria for physical education teaching major and offering an IAPE course were given the opportunity to participate. Reliability for the PEATID-III PS was .8 in this study. Based on the 5-point Likert scale of the PEATID-III, results showed that pre-service teachers had a mean total attitude score of 3.57 (SD = .40) toward students with the three disabilities. Results of a repeated measures ANOVA indicated mean attitude scores toward the three disabilities were the following descending order: LD, MiMR, and BD There were significant differences [$F(2.802) = 71.14$, $p < .01$] in attitudes toward the disabilities between BD and MiMR, MiMR and LD, and BD and LD. Probably pre-service teachers were less receptive toward students labeled as BD and MiMR because BD students' behavior tends to be disruptive and interfere with classroom routine, and students with MiMR tend to have low motor skills and learn at slower rates than students without disabilities. Findings suggest the need for structured practica designed to foster acceptance of students with BD and MiMR.

PP-2. ***Relationship between Central District AAAHPERD pre-service physical education teachers attributes and attitude toward students with mild disabilities.**** Folsom-Meek, S. L. [MSU] and Nearing, R. J. [SCTU]. The purpose of this study was to determine relationships between pre-service physical education teaching majors' (PETMs) attributes (age, number of adapted physical education [APE] courses, year in school, number of other courses relating to individuals with disabilities, hands-on experience, perceived competence, introductory APE [IAPE] practicum course

requirement, overall educational preparation, and certification level, and attitude toward students labeled behaviorally disordered, mildly mentally retarded, and learning disabled. All institutions in the nine CDAAAHPERD states who offered both physical education teaching major and an IAPE course were given the opportunity to participate. PETMs (N = 402) completed the PEATID-III Pre-service Version [PS] (Rizzo, 1993) during the last two weeks of the course. In this study, reliability for PEATID-III PS was .88. Based on the 5-point Likert pre-service teachers had a man total attitude score was 3.57 (SD = .40) toward teaching students with the three selected disabilities. Results of a forward step wise multiple regression analysis indicated that perceived competence [$r = .28$; $r^2 = .08$; $F (1.341) = 29.50$, $p = <.01$], number of APE courses ($r = .31$, $r^2 = .09$, $F (2.340) = 17.75$, $p < .01$], and overall educational preparation [$r = .33$, $r^2 = .11$, $F (3.339) = 13.44$, $p < .01$] were significant predictors of total attitude scores. Although the proportion of variance accounted for by significant attributers was small, it was expected due to the theoretical orientation of the PEATID-III. PETMs with favorable attitudes perceived themselves as competent, had taken more than one APE course, and rated their overall educational preparation as high.

PP-3. ***Course content characteristics of the introductory adapted physical education course for pre-service physical education teaching majors in Central District AAHPERD.***** Nearing, R. J. [SCSU], and Folsom-Meek, S. L. [MSU]. The purpose of this study was to describe the course content characteristics of the introductory adapted physical education (IAPE) course for pre-service physical education teaching majors in Central District AAHPERD. The 44 completed questionnaires represented instructors from every state in Central District AAHPERD who taught the IAPE course to pre-service physical education teaching majors. Results revealed the majority of IAPE courses were taught through a semester system (72.7%) half (50.0%) were offered once a year, and 47.6% twice a year. Over 93% of the instructors included federal or state legislative actions, specific disabling conditions, inclusion and/or mainstreaming, and athletic competition. Practical experiences with individuals with disabilities were required in public schools (68.2%) and other locations (70.5%). The greatest number of practical experience hours required were "6 to 10 hours"

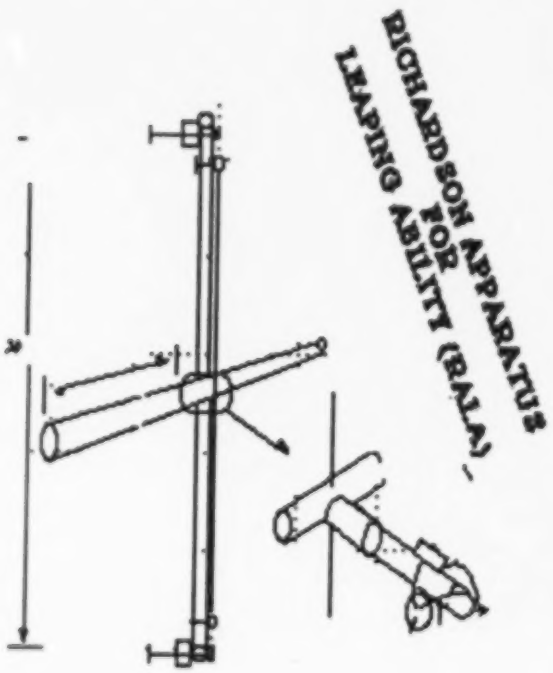
(29.4%), followed by "greater than 20 hours" (23.5%), "16 to 20 hours" (17.4%), "11 to 15 hours", and "less than five hours" (14.7%). Simulation activities (77.3%), films/videos (75.0%), speakers who work with individuals who are disabled (63.6%), and speakers who have a disability (54.4%) were also utilized. Four primary textbooks were selected: (a) Auxter, Pyfer, and Heuttig (24%); (b) Sherril (22.0%); (c) Dunn and Fait (17.1%); and Horvat (12.2%). Major library holdings which enhance course content included: Adapted Physical Activity Quarterly (72.2%), Palaestra (36.4%), and Sport N' Spoke (25.0%).

PP-4. ***Educational preparation of Central District AAAHPERD instructors of introductory adapted physical education courses for pre-service physical education teaching majors.*** ** Nearing, R. J., [SCSU], and Folsom-Meek, S. L., [MSU]. The purpose of this study was to describe the educational preparation of instructors teaching the introductory adapted physical education (IAPE) course for pre-service physical education teaching majors. The 44 completed questionnaires represented instructors from every state in Central District AAAHPERD who taught the IAPE course. Results revealed the majority of instructors were females (59.1%) with an average age of 43.9 years. Over half (56.8%) held a doctorate degree and 40.9%, a masters degree. Thirty-eight (86.4%) indicated having adapted physical education (APE) specialization as a major (42.1%) or minor (11.5%). Average number of graduate courses taken in APE was 6.5, ranging from 0 to 20. All but three instructors (93.2%) indicated they had hands-on experience working with individuals with disabilities; 78.3% suggested they had worked 100 hours plus. At least half indicated they attended (68.2%) and presented (50%) at meetings addressing individuals with disabilities. Number of years of teaching the IAPE course ranged from 1 to 20 years (μ = 8.3). Forty instructors (97.6%) indicated that they enjoyed teaching IAPE course. Results of this study suggest instructors who teach the IAPE course tend to be: females, aged 43.9 years; earned a doctorate degree with APE specialization; completed average of 6.5 graduate courses in APE; had worked over 100 hours with individuals with disabilities; attended and presented at meetings emphasizing individuals with disabilities; and enjoyed teaching the IAPE course for an average of 8.3 years.

PP-5. ***Therapeutic recreation: a descriptive study of participation levels of adolescents during psychiatric hospitalization.*** Newsome, J. D., [USD]. The purpose of this study was to develop descriptive data in regard to patients' participation ratings in Therapeutic Recreation activities in the first 10 days of hospitalization. The study examined four variables; gender, admission status, diagnosis, and activity type. The study also sought to test if there was a significant statistical difference based on participation ratings. Seventy four (74) adolescents medical files were studied to ascertain their participation ratings during TR activities. The data were compiled in a computer data base program developed for this study. The statistical analysis, ANOVA, was conducted by using Systat, a statistical package. Results - The data indicated that the participation involvement during therapeutic recreation (TR) activities in regard to gender and diagnosis was very similar and there was no significant difference between the groups. However, admission status and activity type participation ratings were not similar and there was a significant difference between the two groups. Patients being admitted on a voluntary basis had a higher level of participation than those who were admitted involuntarily. In addition, social and diversional TR activities had a higher participation rating compared to physical and educational activities.

PP-6. ***Richardson apparatus for leaping ability [RALA].*** Richardson, J. A. [USD]. The purpose of this equipment is to improve vertical jumping altitude at a practicable, regulated, consistent, efficient, and cost effective manner through plantar flexion training. The secondary purpose is to keep the cost of the training to a minimum. This invention was conceived as a result of studying the work of Sargent (1921) and Pavlov (1927). Applying the tests and responses of these two men, it is possible to generate six inches of vertical jumping improvement in as many days. Over the past fifteen years, the RALA has been successfully applied in high schools and colleges in Arkansas, Tennessee, and Kentucky. The procedure consists of assembling .5 inch, and 1 inch plastic pipe (PVC) in the configuration of a vertically moving three dimensional "T." The starting procedure consists of administration of the the Sargent jump test. In this procedure the subject reaches as high as s/he can against a wall, and then jumps using a double footed take off three times in a

row. The greatest distance is recorded. In the training phase, the subject starts one inch below her/is maximal effort, and has 20 chances to touch the buzzer 10 times in a row. After an increase of six inches, the subject will plateau for 10 to 14 days, and start the same predictable increases.



PP-7. ***Fans till we die: a profile of season ticket holders for lady bears basketball.*** Sims, R., and Wilkerson, M., [SWMSU]. Purpose: Much research has been directed at fans, particularly male fans of men's sports, but no systematic analysis has considered the spectators of women's sports. This study is designed to initiate such an inquiry at Southwest Missouri State University State when last years average home game attendance was 8,191, which was second highest in the nation. The previous year SMSU placed first with an average of 7,421. Specifically, the purpose of the study is to identify a fan profile, inclusive of socioeconomic and demographic characteristics, reason for supporting women's basketball, opinions about players and coaches, and thoughts about role they, as fans, play at the games. Populations: Questionnaires were sent to the 1,647 individuals listed as season ticket holders for the Lady Bears Basketball 1994 season. Sixty percent of the questionnaires were returned. Results: Fans of Lady Bears Basketball are well-educated, middle-aged, and employed in some type of professional specialty. The are married and attend games with their spouse and child(ren). Attraction of high quality athletic performance and the character of the athletes and coaches, there ticket holders almost always attend all home games. They are well versed in basketball jargon, statistics, and strategy and often engage others in conversations about Lady Bears. Their abiding concern is the potential corruption of the women's game by big money interests and an all

consuming 'win ethic.' Conclusion: Committed and loyal, Lady Bears fans insist they are part of a program solidly grounded in the highest principles of competitive athletics. Not content to be entertained by simply viewing the action, they are eager to be called into service. As the 'sixth player,' they are in the game, sharing in victory and defeat.

PP-8. ***Comparison of reaction time measurement in male athletes and non - athletes using two devices.*** Huesgen, R., Mathews, D., Ell, T., Piper, F. C., and Mayhew, J. L. [NEMSU]. The purpose of this study was to compare the reaction time (RT) of male athletes and non athletes using two different devices. Twenty college men (10 athletes and 10 non-athletes) were evaluated for RT movement time (MT), and total response time (TRT) using a standard electronic timer (Lafayette, model 63016). Each subject was also evaluated using a Nelson Reaction Timer (model RT-2) which is a stick calibrated to estimate RT when caught between the thumb and index finger. Testing was randomized between the two devices. Ten trials were given, and the average of the final six was used for analysis. The athletes were 8% faster than the non-athletes on the Nelson RT, but 3% were slower on the electronic RT test. Athletes were 14% and 5% faster on the MT and TRT, respectively, compared to non-athletes. None of the differences was significant. The correlations between the Nelson Reaction Timer and the electronic RT, MT, and TRT were nonsignificant for both athletes ($r = -0.16$, 0.38, and 0.26, respectively) and non-athletes ($r = -0.17$, 0.01, and -0.33, respectively). Contrary to previous recommendations, the Nelson Reactions Timer cannot be used to provide reasonable estimates of standard RT components for either male athletes or non athletes.

PP-9. ***Isometric strength measurements as predictor of physical performance tests in college men.*** Piatt, C. , Guy, M., Himmelberg, L., Ballmann, K., Mayhew, J. L., and Bowen, J. C. [NEMSU]. The purpose of this study was to determine the relationship between isometric strength measurements and selected physical performance tests. College men ($n = 86$) were tested isometrically for right and left grip strengths and back and leg strengths. Performance tests included vertical jump (VJ), vertical jump power (VJP), standing long jump (SLJ), 40-yd dash, Margaria-Kalamen stair run (MKP), predicted Vo_2max, and physical working capacity at a heart rate of 170

(PWC-170). All absolute strength measurements had significant but low relationships to the power tests (Irl = 0.00 to 0.22). Leg strength was moderately significant related to PWC-170 (r = 0.29). Express strength relative to body mass generally reduced the correlations with both power and aerobic capacity measurements. Relative strength remains significantly related to VJ (r = 0.22), VJP (r = -0.25), SLJ (r = 0.40), 40-yd dash (r = 0.42), and relative Vo_2max (r = 0.27). In conclusion, isometric strength is only moderately related to aerobic power performances in men and can explain <24% of the variance in dynamic performance.

PP-10. ***Comparison of two methods of measuring sit-and-reach flexibility in high school students.*** Cole, M. L., Mayhew, J. L., Boleach, L. W., and Piper, F. C. [NEMSU]. The purpose of this study was to determine the relationship between a standard sit-and-reach (SSR) test and a modified sit-and-reach (MSR) test. Fifty senior high school students (18 girls; and 32 boys, ages 14 to 18 y) were measured for SSR with standard box device. MSR was measured using the box device corrected for the distance from fingertips to the box. Anthropometric assessments of height, sitting height, weight, arm length, and leg length were taken. Arm length and leg length were also expressed as percents of height. The SSR was significantly related to leg length (r = -0.41) and arm length (r - 0.41) in boys and to age (r = 0.59) in girls. The MSR was not significantly related to any antrhorpometric variable in either gender. In the composite sample, none of the anthropometric variables was significantly related to either flexibility test. The SSR was significantly related to the MSR in boys (r = 0.91), girls (r = 0.83), and (r = 0.87). In conclusion, neither the standard sit-and-reach flexibility test nor a modified version was significantly influenced by limb length in either high school girls or the composite group. Longer legs and arms in boys were negatively related to flexibility measurement using the SSR. While both tests may be acceptable for assessing flexibility, the MSR is unaffected by limb dimensions in both genders and may be preferable for assessing high school students.

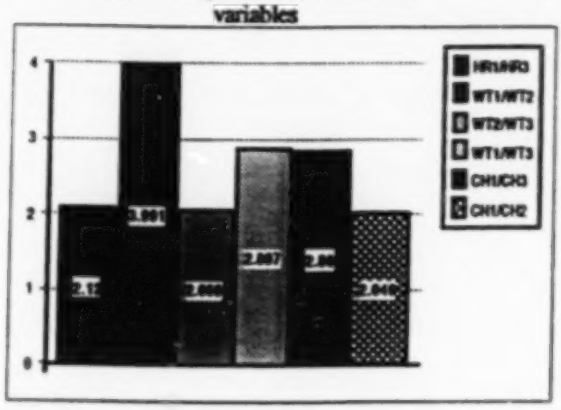
PP-11. ***Recommendations for school system selection of devices which measure adipose tissue.*** Timperley, D., [MC], Potter, D. R., Richardson, J., & Danielson, L., [USD]. The purpose of this study was to compare three methods of determining body composition for possi-

ble school system selection. In order to assess the students' adipose tissue, there are a number of criteria for a device to meet for use in Physical Education classes. These include, but are not limited to: accuracy, the amount of time in administering the test, cost for materials used, and purchase price. Ninety-five Caucasian adolescent male Physical Education students from a Midwest city participated in this study. The mean age of the subjects was 14.58 (standard deviation = 0.52). Subjects underwent three methods of body composition analysis during their regular Physical Education class: infrared (FUTREX 5000a), skin fold (SKYNDEX), and bioelectrical impedance (ELGII). The results of the study indicate at $p < .05$ that: 1. there was not a significant difference between the FUTREX 5000a and SKYNDEX in measuring percent adipose tissue, but there was between the ELGII and the other two devices. 2. There was a significant difference for the time taken to administer the testing of the ELGII, FUTREX 5000a, and SKYNDEX. The SKYNDEX took the shortest amount of time to administer the testing. 3. The SKYNDEX cost the least per student. Therefore, it appears that for school system selection the FUTREX 5000a and/or SKYNDEX should be considered. The SKYNDEX cost the least and takes significantly less time to administer testing. The FUTREX 5000a had the advantage of privacy in testing.

PP-12 - ***A longitudinal study of physiological changes in 16 free living college football players.*** Richardson, J. A., Fishback, B., Marian, C., Engelking, J. [USD], & Timperley, D. [MC]. The purpose of this study was to determine the significant differences in physiological changes that occur in 16 college football players from 1990 to 1992. The ages of the subjects ranged from 19 to 22 throughout the time period. All data were collected within the first week of the subject reporting for fall practice. The results suggest that there were statistical significance using Fisher PLSD between the Tsc_1 & Tsc_2 and Tsc_1 & Tsc_3, whereas there were no statical significance between the other variables - There were statistically significant t-Test [CV 15 df @ .05 = 1.753*] differences between: Ht_1/Ht_3 (t = 2.298*); Wt_1/Wt_2 (t = 3.991*); Wt_1/Wt_3 (t = 2.069*); Wt_1/Wt_3 (t = 2.298*); Sy_1 and Sy_3 (t = 2.469*); Sy_2/Sy_3 (t = 3.322*); Tsc_1/Tsc_3 (t = 2.86*); and Tsc_1/Tsc_3 (t = 2.049*). Figure 1 is a visual representation of the t-values. The conclusions that this data allows includes: the "free living factor" seems to have

little effect on the subjects; the Student-t data in some cases - Ht and Wt - suggest normal growth patterns that involve a less active life and a large caloric intake. In the cases of the systolic blood pressure, and the cholesterol there was no correlational interaction,

Figure 1 Significant t values and variables



PP-13. ***Comparing fitness between two geographically different female populations on selected wellness measures.*** Clark, M. J., Richardson, J. A., & Richardson, M. V. [USD]. The purpose of this study was to compare 30 to 55 year old rural west river (RWR) and urban east river (UER) women on lumbar flexibility, percent of body fatness, grip strength, and total serum cholesterol. In recent years there has been very limited research on the fitness of women in either geographic areas. The protocols used were: the sit-and-reach test lumbar flexibility, Near infrared for percent body fat, dynomometer to test grip strength and ProAct finger prick technique for total serum cholesterol. The results of this study include; mean age revealed no significant difference between the RWR and UER women in any of the variables; the mean age for RWR = 43.5 years (±1.44) and UER = 44.45 years (±6.84) with a Fisher of 13.427 and Scheffe of .15; weight RWR = 153.6 (±27.97) and UER = 161.91 (±33.68) with a Fisher of 13.427 and Scheffe of .062; flexibility RWR = 35.1 cm (±8.51) and UER = 43.82 (±5.542) with a Fisher of 13.427 and Scheffe of .226; body fatness RWR = 31.64 (± 8.51) and UER = 37.21 (9.38) with a Fisher of 13.427 and Scheffe of .221; grip strength RWR = 71.9 (±9.09) and UER = 61.03 (±10.2) with a Fisher of 13.427 and Scheffe of .226; and total serum cholesterol RWR = 191.02 (±42.77) and UER = 201.54 (±38.12) with a Fisher of 13.427 and Scheffe of .221. These data compare with national and international norms in the following ways: flexibility - RWR above average and UER excellent; body fatness - RWR fat and UER obese; grip strength - RWR above average and UER above average; and total serum cholesterol - RWR = 35th percentile and UER = 50th percentile. The conclusions that can be drawn from this study are: a) the

flexibility of these two groups is above average to excellent; b) the body fatness of these two groups is at a dangerous level; c) grip strength of both groups is above average; and d) the total serum cholesterol of both groups is at or below the mid-point.

PP-14. ***The total serum cholesterol fluctuations in active and non-active 18-30 year old women during their menses.*** Marian, C., Richardson, J. A., & Christensen, O., [USD]. Coronary heart disease (CHD) is the leading cause of death in the U.S. for women. One of the leading causes of CHD is high levels of total serum cholesterol concentration (TSCC). The manifestation of TSCC differs for women and men, therefore it is important that these differences be explored from every possible angle. This study measured the cholesterol fluctuations of active and non-active 18 to 26 year old women during their menses. TSCC was measured during mid cycle, 24 hours, 48 hours and 72 hours post onset of menstruation. Current literature suggest that some fluctuation exist. From this study no significant fluctuation was detected for both active and non-active groups. The researcher used analysis of variance (ANOVA) and set a 0.05 level of significance. In conclusion it is suggested that more studies be done regarding menstruation and level of activity. Studies that control the dietary intake of research subjects are highly recommended. Studies that compare subject from different ethnical background would also increase our knowledge about how relevant level of activity is, towards cholesterol fluctuation during menses.

Mean (μ) and standard deviation (±) for TSCC at Mid-cycle (MC) First-day (FD), Second day (SD), and Third day (TD) for Active (A) and Non-active (NA) Women.

Variables	μ	±
MCNA	153.3	30.89
FDNA	163	15.72
SDNA	154.33	28.04
TDNA	154.67	19.01
MCA	146.67	20.97
FDA	140.67	20.73
SDA	142.5	18.36
TDA	146.67	20.97

**Note: This research was funded by a grant from CDAAAHPERD.

Poster Presentation (PP).

Colleges and Universities:

MC - Moringside College, Sioux City, IA 51106
MSU - Mankato State University, Mankato, MN 56002-8400
NEMSU - Northeast Missouri State University, Kirksville, MO 63501-0828
SCSU - St. Cloud State University, St. Cloud, MN 56301-4498
SWMSU - Southwest Missouri State University, Springfield, MO 56804- 0089
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